

Application No: 10/576,036  
Amendment A  
Reply to Office Action Dated November 16, 2006

Attorney Docket No: 3926.246

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REMARKS

Claims 7-12 are pending in the application. Claim 7 has been amended. Claims 1-6 have been previously cancelled.

First, Applicants would like to briefly review the present invention.

Speech dialog systems (speech recognition systems) are being increasingly used to operate complex technical devices, in particular assistance systems in motor vehicles. However, in speech dialog systems there is generally the problem that the system has to be operated in a possibly optimum way in terms of speech by users having different degrees of experience.

There are speech dialog systems in which it is possible for the system user to specify how familiar he already is with the system. However, the settings for the degree of familiarity are input actively by the system user and the respective settings thus relate to the entire dialog.

A speech dialog system to offer support automatically is disclosed in the prior art. During the course of the dialog, the system continuously assesses the system user with respect to his degree of experience and configures its prompts correspondingly. It is problematic here that in cases in which an expert makes an incorrect input, for example due to distraction, he subsequently receives repeated and unnecessarily detailed prompts which he could experience as disruptive.

The object of the present invention is therefore to provide a method for user-adaptive dialog guidance for a speech dialog system, which differentiates inexperienced and experienced system users, and generates prompts which are adapted thereto in such a way that even in cases in which an experienced user has reacted incorrectly within a dialog step, he is directly treated

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again as an experienced user in the subsequent steps without disadvantages for inexperienced users.

In order to achieve the above object, the present invention provides a method including the following steps:

outputting a speech prompt by the speech dialog system,  
waiting by the speech dialog system for an utterance by a system user in response to the speech prompt,  
activating a speech recognition system in order to understand the utterance by the user,  
differentiating by the system inexperienced and experienced users and outputting by the system a detailed prompt to inexperienced users and a shortened prompt for experienced users,  
initializing a dialog step with a shortened prompt on the part of the speech dialog system,  
outputting a detailed prompt if there is no utterance by the system user in response to the shortened prompt after a specific time.

### Specification

The disclosure is objected to because of an informality. More specifically, the Examiner has stated that the specification does not give a description of the invention.

A heading "DESCRIPTION OF THE INVENTION" has been added before paragraph [0008].

### Claim Rejections - 35 U.S.C. § 102

Claims 7-12 are rejected under 35 USC 102(b) as being anticipated by Surace et al. (US 6,144,938).

Claims 7-8 and 12 are alternatively rejected under 35 USC 102(e) as being anticipated by Johnston (US 6,603,836).

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Surace et al. disclose a voice user interface with personality in which a prompt is selected based on various context situations, such as previously selected prompt and the user's experience with using the voice user interface (see the abstract). However, Surace et al. do not disclose initializing a dialog step with a shortened prompt and outputting a detailed prompt if there is no utterance by the system user in response to the shortened prompt after a specific time (speech recognition system timeout). In this way, the dialog step always begins with a shortened prompt so that it is always possible for the experienced system user (expert) to take the initiative, that is to say he always has the possibility of deciding about the type of the dialog. If, at a point in the speech dialog, even he is unsure about what type of speech utterance the speech dialog system expects here, he can simply wait for the speech recognition system timeout to occur and then receives a detailed prompt. During the subsequent steps, the experienced user can make utterances again straightaway after the shortened prompt and therefore speed up the dialog. See paragraph [0009] on page 4 of the specification.

The system described by Surace shows speech outputs that vary in their duration over "expert/novice rules 508" (column 9, lines 3-24). The duration of the speech output is continuously adjusted in dependence on the previous dialog course. This has, among other things, the result that when an experienced user makes an input error, he or she will again be served or annoyed by longer speech outputs. In contrast, in the present invention, the experienced user will receive again the short prompt in the next iteration even after errors or demand of a detailed prompt.

Table A of Surace et al. shows a detailed dialog for the modify appointment command for voice user interface with personality. Although "TIMEOUT" is shown in columns 25 and 26 of Surace et al., it is different from the timeout concept of the present invention. For example, after a timeout, the system of Surace et al. will say "Hurry up and say something," but will not output a detailed long prompt. The system of Surace et al. needs a complicated system of "expert/novice rules 508" in order to satisfactorily serve both the experienced and the

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inexperienced users. In contrast, the present invention, through a strict prompt sequence of a first shorter duration and then a longer duration after "speech recognition system timeout," does not need such complex rules.

Johnston discloses an interactive apparatus allowing the user to interrupt an outgoing prompt and remove component which is normally found in the users' responses from the outgoing output prompt. The text in column 6, lines 5-57 of Johnston describes how an experienced user can cut short the output message and speed up the process as shown in Fig. 3. This has, however, nothing to do with the concept of that present invention in which a shortened prompt is initiated and a detailed prompt will be output only if there is no utterance by the user in response to the shortened prompt after a specific time.

Although the system described by Johnston differentiates between an experienced user and an inexperienced user, the speech output of the system occurs in the same way for both types of users. It is only provided that the experienced user can interrupt the speech output, which is generally denoted as "barge-in." Such a "barge-in" interrupts the speech output so that the speech output takes place for a shorter time. However, the system does not choose a shorter speech output (prompt) from the beginning. Since the present invention always starts with a short prompt, the implementation of a "barge-in" can be dispensed with. The experienced user does not need to interrupt a long prompt. If an experienced user does not answer a short prompt, he or she is probably glad to have a detailed long prompt and does not want to interrupt it.

Claim 7 is, therefore, believed to be patentable over Surace et al. and Johnston. Since all the dependent claims are ultimately dependent on claim 7, they are believed to be patentable as well.

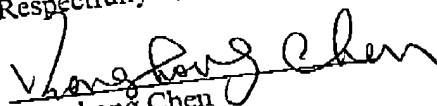
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Favorable consideration and early issuance of the Notice of Allowance are respectfully requested. Should further issues remain prior to allowance, the Examiner is respectfully requested to contact the undersigned at the indicated telephone number.

Date: January 30, 2007

Respectfully submitted,

  
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